



ModSim '97 USA

Workshop on the Role of
Modeling and Simulation
in Environmental
Management

21-24 September 1997
Crowne Plaza Pyramid Hotel
Albuquerque, New Mexico USA

Los Alamos
NATIONAL LABORATORY



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Environmental Management Modeling and Simulation Workshop

Crowne Plaza Pyramid Hotel Albuquerque, New Mexico USA September 21-24, 1997

1-505-821-3333 1-800-465-4329 FAX 505-828-0230

The workshop has the following objectives:

- Discuss whether the application of established classes of models and existing modeling, analysis, simulation, decision-support tools and methodologies should be promoted for making effective decisions in environmentally oriented planning, design, management, and system engineering.
- Evaluate whether new models, tools, and methodologies should be developed that are superior to existing ones; should these tools be developed specifically addressing areas of concern for DOE, Department of Defense (DoD), and other governmental organizations.
- Evaluate whether new models, tools, and methodologies, perhaps in conjunction with applications of established models and tools, be applied to support the DOE and DoD decision-making process.
- Address areas of application: environmental restoration, waste management, waste minimization and pollution prevention, decontamination and decommissioning, DOE and DoD programs and environmental media models.

SUNDAY 9/21	MONDAY 9/22	TUESDAY 9/23	WEDNESDAY 9/24
	8:00 ~ Breakfast* ~	~ Breakfast ~	~ Breakfast ~
	8:30 Welcome	Interest Area Workshop Sessions (II)	Wrap-Up Sessions
	9:00 Plenary Talks		
2:00-8:00 Registration	10:00 Break	Break	Break
3:00-5:00 Preliminary Meeting for Steering Committee, Co-chairs, and Reporters	10:15 Panel Discussion	Interest Area Workshop Sessions (II)	Wrap-Up Sessions
	11:15 Questions		
	12:00 ~ Lunch ~	~ Lunch ~	~ Lunch ~ (End of Conference)
6:00-8:00 Reception	1:00 Interest Area Workshop Sessions (I)	Interest Area Workshop Sessions (III)	Integration Discussions (Steering Committee, Interest Area Co-Chairs, Reporters only)
	3:00 Break	Break	Break
	3:15 Interest Area Workshop Sessions (I)	Interest Area Workshop Sessions (III)	Integration Discussions
	5:00 - 6:00 Informal Poster Sessions		Close of Discussions

*Breakfast and Lunch will be provided: Dinner on your own.

INTEREST AREA CO-CHAIRS

ACTINIDES

Beverly Ramsey, *DOE/AL/ATL*

Joel D. Williams, *Los Alamos National Laboratory*

SUBSURFACE CONTAMINATION

Jeff Holland, *USAE, Waterways Experiment Station*

David B. McWhorter, *Colorado State University*

Karsten Pruess, *Lawrence Berkeley National Laboratory*

Steve Yabusaki, *Pacific Northwest National Laboratory*

DECONTAMINATION AND DECOMMISSIONING

Steven J. Bossart, *DOE/Federal Energy Technology Center*

Paul W. Hart, *DOE/Federal Energy Technology Center*

ENVIRONMENTAL SECURITY

Willard J. Hannon, *Lawrence Livermore National Laboratory*

Joanne Kaufmann, *Massachusetts Institute of Technology*

WASTE TREATMENT

Ron Bhada, *New Mexico State University/WERC*

W. Lamar Miller, *University of Florida*

HEALTH AND ECOLOGICAL EFFECTS

Jeanne Fravel-Meyers, *Department of Navy*

Thomas B. Kirchner, *Carlsbad Environmental Monitoring and Research Center*

John Krummel, *Argonne National Laboratory*

John S. Young, *Hampshire Research*

INFRASTRUCTURE

R. Wayne Hardie, *Los Alamos National Laboratory*

MANUFACTURING/POLLUTION PREVENTION

Scott Butner, *Pacific Northwest National Laboratory/Seattle*

John Marchetti, *DOE/Defense Programs*

September 22, 1997 (Morning only): Plenary Session

Introduction and Welcome: **Tom Baca**, *Los Alamos National Laboratory, Director: Environmental Management Program*

Welcome: **Gerald Boyd**, *Acting Deputy Assistant Secretary, Department of Energy/Environmental Management/Office of Science and Technology*

Broad Overview: **Jeffrey Walker**, *Department of Energy/Environmental Management/Office of Science and Technology*

- Academic Representative: **David McWhorter**, *Colorado State University*; discuss status of modeling and simulation as a discipline with examples where it has been particularly useful.
- Industrial Representative: **David Bluch**, *Simulations Sciences, Inc.*; discuss role of modeling and simulation in industry with examples where it has been particularly effective.

Plenary Panel:

Panel discussion of how each government/industry/academic entity views modeling and simulation within their disciplines. Discussion will start with each panel member giving a 5 to 10 minute overview, with questions from the moderator and audience to follow. The panel will consist of the following members:

Subhas K. Sikdar: *Environmental Protection Agency*

Caroline B. Purdy: *Department Of Energy*

Jeff Holland: *Department of Defense*

Lester Lave: *Carnegie Mellon University*

Alan Pritsker: *Alan Pritsker Corp.*

September 22, 1997 (Afternoon only): Interest Area Workshop Sessions I

The following questions/issues will be addressed within each working group, with one overriding question to be addressed throughout: **What are the recommendations for further development of modeling and simulation?** (Keep in mind the summary to be presented on Wednesday morning.)

1. What are the important problems to be addressed by modeling and simulation? Includes broad issues such as political, economic, safety, societal, etc. concerns.
2. Which questions in this area can be answered with models?
3. What is the size/imminence of this problem?
4. What is the current level of effort toward solving the problem(s) relative to their perceived relative importance?

Each group will have some flexibility in addressing these questions, and may move ahead if appropriate.

September 23, 1997 (Morning only): Interest Area Workshop Sessions II

Continue deliberations within each working group, but adding these questions to the mix:

5. Have models been used in this interest area, and if so, which ones?
6. What can be done with models in this area? (examples, success or non-success stories)
7. If modeling and simulation is not being used, why not?
8. Is there a gap between development and application?

At the end of the morning session, the co-chairs will create a poster to be placed outside the group meeting room summarizing some of the modeling/simulation techniques discussed and their applicability so that other groups can see where techniques can be shared.

September 23, 1997 (Afternoon only): Interest Area Workshop Sessions III

Continue deliberations within each working group, but adding these questions to the mix:

9. Have there been benefit/cost studies for various modeling techniques? Do we expect a good payoff if efforts are expanded into modeling and simulation
10. What modeling and simulation techniques are shared with other interest groups?
11. What are the other benefits to modeling and simulation?
12. What measures can be used for assessing how well modeling and simulation help?

Each team will prepare a verbal summary for the following morning (3 recommendations, 2 or 3 viewgraphs (or posters), presentation to be no longer than 10 min with 5 min for questions). In addition, a written summary will be prepared that includes further detail for the report, including relative priorities on recommendations.

September 24, 1997 (Morning only): Wrap-Up Sessions

Interest Area Leaders: present summary of conclusions and recommendations from each group.

Organizers (including Reporters): summarize, moderate discussion, and provide report timeline.
End of the formal workshop.

September 24, 1997 (Afternoon only): Integration Discussions Interest Area Leaders, Steering Committee Members, and Reporters only.

Develop annotated outline and/or first draft of conclusions and recommendations: *Is modeling and simulation adequate? Why and why not?*

The final report will provide:

- a cross-agency perspective
- role and rationale for modeling and simulation
- executive summaries tailored to agency
- explain underlying concepts for management (also discuss mechanisms for better communication of modeling and simulation approaches)
- consistent quality across interest areas
- opportunities for interagency cooperation
- focus on overlaps between modeling and simulation in different interest areas.

Post-Workshop Activities

Preparation of the Workshop Proceedings will occur as follows:

- The draft document prepared during the workshop will be given to writer/editors for final preparation. The reporters will aid in this activity;
- The edited version of the proceedings will be given to the Interest Area Co-Chairs for review and comment;
- After incorporation of the comments and suggestions received from the Interest Area Co-Chairs, the next version will be given to the Steering Committee for review and comments by Oct 10; and
- After incorporation of comments and suggestions from the Steering Committee (due back by October 24, 1997), the document will be submitted to DOE/EM for review and comment prior to publishing (target date: early November, 1997).

Executive Steering Committee

Gerald G. Boyd *Deputy Assistant Secretary (Acting), DOE/EM Office of Science and Technology*

Heriberto Cabezas *EPA National Risk Management Research Laboratory*

Steven V. Cary *Department of Defense/ODUSD(ES)*

John A. Marchetti *DOE/Defense Programs (DP-45)*

David B. McWhorter *Colorado State University*

W. Lamar Miller *University of Florida*

Alan Pritsker *Alan Pritsker, Inc.*

Caroline B. Purdy *DOE/EM Office of Science and Technology (EM-53)*

Harry M. Thron Jr. *DOE/EM Office of Environmental Restoration (EM-42)*

Mathew J. Zenkowich *DOE/EM Office of Waste Management (EM-35)*

Greg Valentine *Los Alamos National Laboratory Co-Chair*

Ed Van Eeckhout *Los Alamos National Laboratory Co-Chair*

Marja H. Shaner *Technical Host*

ROOM ASSIGNMENTS FOR INTEREST AREA SESSIONS

